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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,931	02/14/2002	Bharat Tarachand Doshi	Doshi 52-2-17-18-I-1	5324
7590	12/06/2005			EXAMINER
Harness Dickey & Pierce PLC P O Box 8910 Reston, VA 20195			LESTER, EVELYN A	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EVL

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/073,931	DOSHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Evelyn A. Lester	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 31 August 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-15 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 14 February 2002 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



EVELYN LESTER  
PRIMARY EXAMINER

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 8-31-05 has been entered.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claims 1, 6 and 11 have been amended to include “non-processed” optical signals.” There is no original disclosure to provide support for this amendment, therefore these claims and the claims, which depend from them (i.e. claims 2-5, 7-10 and 12-15), are considered to contain new matter, causing the claims to be properly rejected under 35 U.S.C. 112, first paragraph. Applicant’s disclosure at page 9, paragraph [0029] teaches that the optical signals are, or may need to be, “processed” through a multiplexer/demultiplexer prior to the optical switch. To one of ordinary skill in the art, this would be a type of “processing” of the optical signals. Therefore, the optical signals received at the optical switch may in fact be “processed.”

Further, as is well known in the optical communications art, namely ultra, long-reach optical fiber networks, all of the optical signals are “processed” along the network, to the extent that the term “processed” is understood and known in the art. There appears to be no way that the Applicant’s invention could incorporate a “non-processed” optical signal, unless the system is utilizing simple lasers (this however is not taught in the Applicant’s disclosure either).

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4-6, 9-11, 14 and 15, as far as these claims are understood, are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fee et al (U.S. patent 5,726,788).

Fee et al disclose the claimed invention of a connection device or router, and the method for providing an optical, service-enabled connection, comprising one or more processing units (f1-f7) and an optical switch (308) for receiving "non-processed" optical signals and to connect at least one of the units to one or more optical signals based on a characteristic of each signal.

With respect to claims 4, 5, 9, 11 and 14, please note Figures 3 and 7, and their accompanying text, especially at column 4, line 30 to column 5, line 18, as well as column 5, line 64 to column 6, line 7; column 7, lines 1-5; lines 24-32 and lines 56-63; and column 8, lines 13-39.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fee et al (U.S. patent 5,726,788) in view of Wong et al (U.S. patent 6,624,927 B1).

Fee et al disclose the claimed invention as described above, except for explicitly including various specific processing units, such as a Raman pump. Fee et al does teach various examples of processing units, in a "non-exclusive representative list," as noted at column 4, line 46 to column 5, line 10. Fee et al further teaches in that non-exclusive list the use of an amplifier (col. 4, lines 49-50) and/or pump insertion (col. 4, lines 58-59) processing units, as part of necessary signal processing functions. Wong et al teaches that it is well known to utilize a Raman pump for the purpose of amplifying optical signals in an optical communications network, so that the power of the signals is maintained at a constant level, thereby avoiding signal degradation due to lost signal power. Wong et al further teaches that various Raman pumping arrangement may be used to pump any suitable optical fiber communications system, such as fiber in optical network equipment including add/drop modules or optical switches (Wong et al at col. 3, lines 49-59). Therefore, it would have been well known to one of ordinary skill in the art to utilize the well known Raman pump of Wong et al for the purpose of amplifying optical signals and/or pump insertion, thereby providing necessary signal processing functions as taught by Fee et al. Please also especially note Fee et al at column 2, line 33 to column 3, line 16.

5. Claims 3, 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fee et al (U.S. patent 5,726,788) in view of Sharma et al (6,331,906 B1).

Fee et al disclose the claimed invention as described above, except for explicitly including various specific processing units, such as an optical-electrical-optical

regenerator. Fee et al does teach various examples of processing units, in a “non-exclusive representative list,” as noted at column 4, line 46 to column 5, line 10. Fee et al further teaches in that non-exclusive list the use of a modulation reshaper and the need for a regenerating process operation (note col. 4, lines 5-17), as part of necessary signal processing functions. Sharma et al teaches that it is well known to utilize an optical-electrical-optical regenerator for the purpose of reshaping optical signals in an optical communications network through techniques for restoration of network services in the event of a failed fiber link (e.g. a break in a fiber or a failure of an active element such as a fiber amplifier) and the use of optical switching to affect such restoration (note Sharma et al at col. 1, lines 53-58). Therefore, it would have been well known to one of ordinary skill in the art to utilize the well known optical-electrical-optical regenerator of Sharma et al for the purpose of reshaping optical signals and affecting signal restoration, thereby providing necessary signal processing functions as taught by Fee et al. Please also especially note Fee et al at column 2, line 33 to column 3, line 16.

#### ***Response to Arguments***

6. Applicant's arguments filed 8-31-05 have been fully considered but they are not persuasive.

In response to the Applicant's argument that the amendment made to the claims, wherein the term “non-amplified” was changed to “non-processed,” was suggested by the Examiner, is not well met. As was stated in the Examiner's Answer, at page 9, “[t]he

Applicant's disclosure does teach that their invention does not require "processing" the optical signals, which may or may not include some sort of optical amplification,..." is not the same as saying the signals are "non-processed." The Applicant's invention may not require processing the optical signals prior to entry into the optical switch, but this not mean that the signals are "non-processed" optical signals. It only means that the Applicant's invention does not act on the optical signals immediately prior to the entry of the optical switch, which as also taught by the Applicant's disclosure, does not include simple amplification. However, as stated in the rejection above, the Applicant's do disclose that the optical signals may need to be multiplexed/demultiplexed prior to entry to the optical switch, which is considered to be a form of processing. Therefore, the Applicant's own disclosure teaches that the optical signals are not "non-processed" optical signals. Hence the rejection under U.S.C. 112, first paragraph is made with respect to the amendment changing "non-amplified" to "non-processed."

In response to the Applicant's argument that Fee et al requires a "processed" signal, is also not well met. It is fairly clear that the Applicant is confusing Fee et al's amplifier with a processing unit, as opposed to what it is, a simple amplification element. Note Fee et al, for example, at column 3, line 64 to column 4, line 4, wherein the "optical amplifier boosts the signal..." or "amplifies the optical signal which is then processed by optical interface device [the optical switch]...". In other words the optical signals are strengthened (col. 4, line 2), nothing more, by the amplifier 206 in Fee et al 's invention. Hence, "simple amplification" is provided by Fee et al, not "processing" such as signal reshaping, or wavelength converting, or even multiplexing/demultiplexing optical

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signal(s) for example. Since simple amplification is taught and defined as acceptable in the Applicant's disclosure as not being a processing step, and is in fact often necessary in ultra-long range optical fiber networks, it stands to reason that Fee et al is allowed to simply amplify the optical signals as well. Consequently, the simple amplification provided in Fee et al's invention does not contradict the amended limitation of "non-processed" optical signal.

In response to the Applicant's argument that one of ordinary skill in the art would not be motivated to combine Fee et al with Sharma et al because to do so would render either Fee et al, Sharma et al or both unsatisfactory for their intended purposes, is not well met.

Fee et al does not disavow the use of an optical-to-electrical-to-optical converter. Fee et al teach that regeneration may be a selected signal processing operation upon the optical signal, and therefore a regeneration-processing unit or module would obviously be required. Sharma et al teach such a regenerating processing unit for an optical communication network system, wherein such unit is an optical-to-electrical-to-optical regenerator. Since Fee et al teach that various module examples, as noted in the "non-exclusive representative list," may be used to provide various processing operations, (clearly taught in column 4, line 46 to column 5, line 10), and that one of the processing operations includes "modulation reshaping," and Sharma et al teach that an exemplary way to provide modulation reshaping is to use an optical-to-electrical-to-optical converter or regenerator (note Sharma et al at col. 5, lines 43-52), it would have been obvious to one of ordinary skill in the art to use the converter or regenerator of

Sharma et al in the invention of Fee et al as one of the processing module units plugged into the optical switch. It is well established in the optical network art that when a signal is converted to an electrical signal, there is more control and flexibility offered. Hence, for the purpose of processing a signal as explained previously, utilizing what is taught by Sharma et al in Fee et al's invention would have been obvious to one of ordinary skill in the art.

As for Fee et al stating that there is no conversion of an optical signal to an electrical signal and back to an optical signal, Fee et al is referring to the unnecessary step of conversion in order to process the optical signals, prior to the optical switch or backplane, in the same manner as the Applicant's invention. The Applicant's invention does not require such a conversion in order to process the optical signals either, and yet an optical-to-electrical-to-optical converter is utilized as a processing unit plugged into the optical switch. Fee et al's invention is interpreted as operating, functioning, and is configured, the same as the Applicant's invention. Therefore, the combination of Fee et al's invention with the teaching of Sharma et al's invention would have been obvious to one of ordinary skill in the art and would not render Fee et al's invention unsatisfactory for its intended purposes.

Further, in response to applicant's argument that the disclosures of Fee et al and Sharma et al would not be combined because this would appear to render Fee et al's invention inoperable for its intended purpose, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in

any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Please note the above explanation regarding the combination of the references to Fee et al and Sharma et al.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evelyn A. Lester whose telephone number is (571) 272-2332. The examiner can normally be reached on subject to an increased flex schedule, M-F, 10-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on (571) 272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Evelyn A. Lester  
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Art Unit 2873